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ABSTRACT

To study the characteristics and academic achievement of home schooled students, data were compiled for 20,760 students in 11,930 families. Families chose to participate before they knew their children's test scores, reducing the possibility of reporting higher scores while leaving lower scores out of the analysis. All students took the Iowa Tests of Basic Skills (ITBS) for grades K through 8 and the Tests of Achievement and Proficiency (TAP) for grades 9 through 12. Home schoolers do exceptionally well when compared with the U.S. average. In every subject and at every grade level of the ITBS and TAP, home school students scored significantly higher than their public and private school counterparts. Almost one in four was enrolled one or more grades above age level, and test scores were analyzed by the student's enrolled grade rather than by age. The achievement gap seen in grades 1-4 begins to widen in grade 5; by grade 8, the average home school student performs four grade levels above the national average. Parents of home schooled students tended to have more formal education than parents in the general population, and they have a higher median income. Home school families tend to be larger than average, and the home school community contains a smaller percentage of racial minorities (6%) than the public schools nationally (32.8%). The report contains an evaluation and discussion of its findings by Michael Farris, President of the Home School Legal Defense Association. (SLD)

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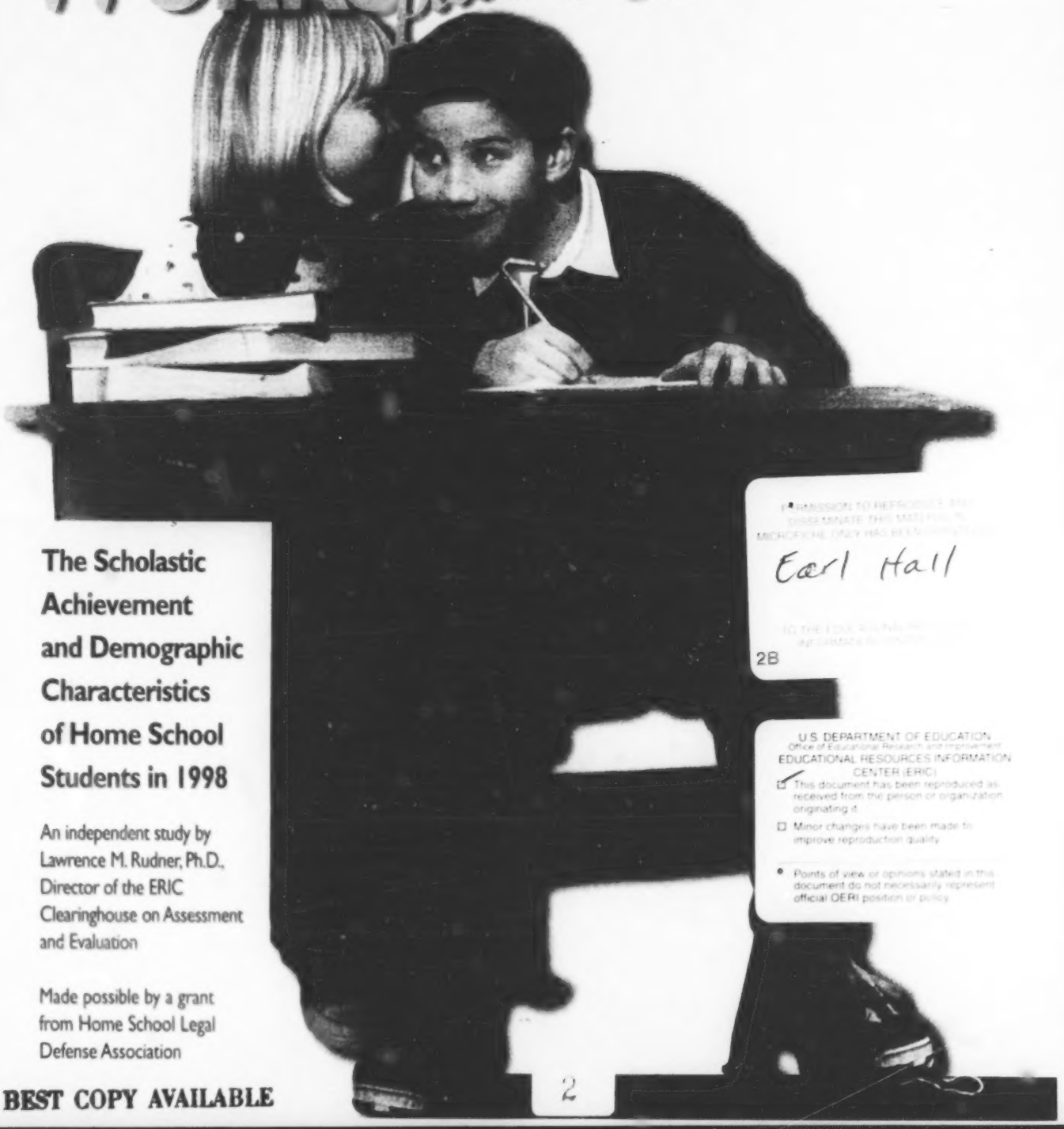
HOME SCHOOLING WORKS *pass it on!*



The Scholastic Achievement and Demographic Characteristics of Home School Students in 1998

An independent study by Lawrence M. Rudner, Ph.D., Director of the ERIC Clearinghouse on Assessment and Evaluation

Made possible by a grant from Home School Legal Defense Association

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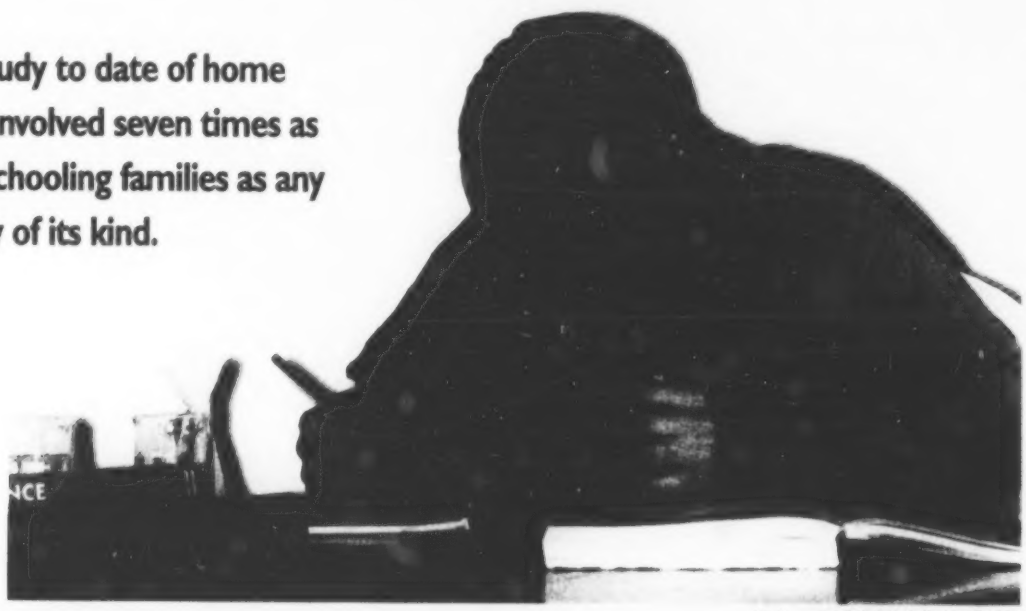
WHY is this study needed?

In the broad spectrum of history, home education **is nothing new**—parents have been teaching their children for centuries. American history is full of men and women who were taught at home, from colonial patriot Patrick Henry to President John Quincy Adams to inventor Thomas Edison.

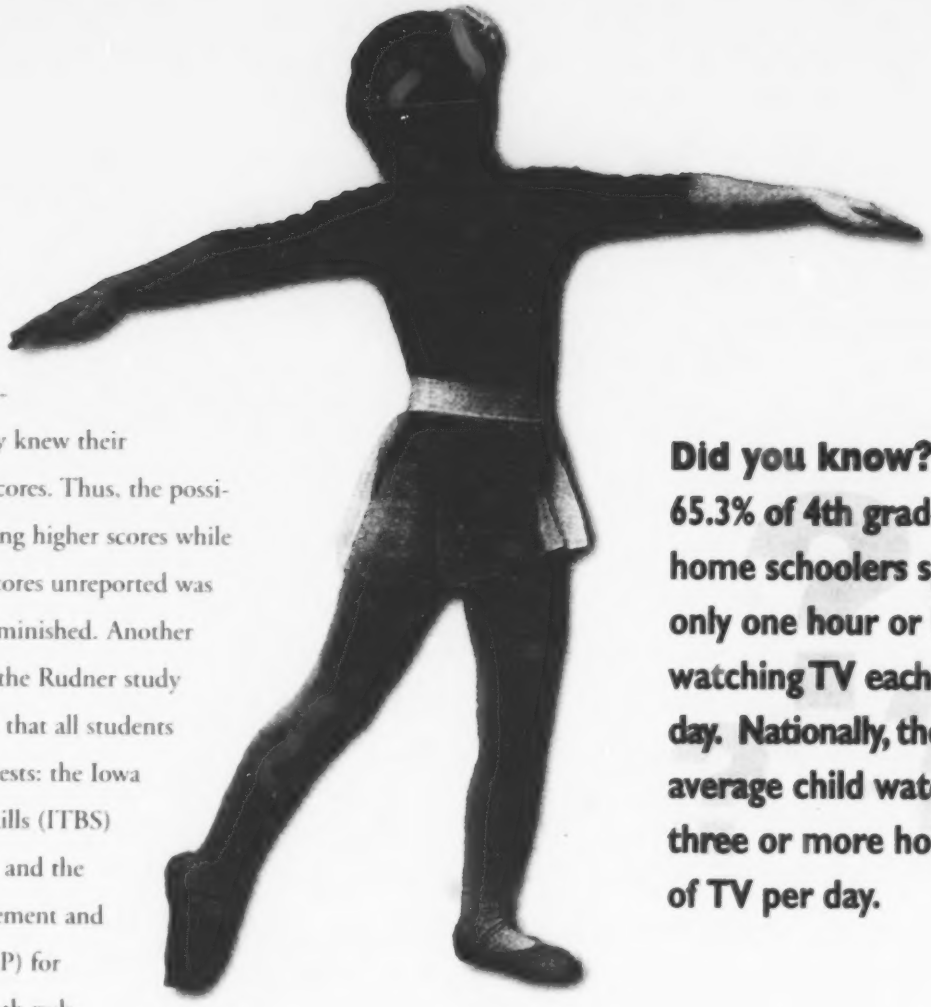
However, in today's world of fast-paced technology and government regulation, the rebirth of home education has raised more than a few eyebrows. "How can ordinary parents hope to do as well as the educational experts?" critics ask. Others wonder, "Who are these families? What drives them to choose such an unusual lifestyle?" Every year, the experts-know-better-than-parents philosophy finds its way into legislation designed to increase the regulation of home education. Similarly, the lack of knowledge about those who home school finds its way into public perception of the home schooling movement.

Clearly, answers are needed. In 1998, Home School Legal Defense Association commissioned the largest research study to date of home education in America. Conducted by Dr. Lawrence Rudner of the ERIC Clearinghouse on Assessment and Evaluation, the study involved seven times as many home schooling families as any previous study of its kind. The data were compiled from the achievement test scores of 20,760 students in 11,930 families, along with background questionnaires submitted by the families.

The largest study to date of home education . . . involved seven times as many home schooling families as any previous study of its kind.



all photos by Rebekah A. Parker ©1999



Did you know??? 65.3% of 4th grade home schoolers spend only one hour or less watching TV each day. Nationally, the average child watches three or more hours of TV per day.

Unlike any previous study, families chose to participate before they knew their children's test scores. Thus, the possibility of reporting higher scores while leaving lower scores unreported was considerably diminished. Another factor that sets the Rudner study apart is the fact that all students took the same tests: the Iowa Test of Basic Skills (ITBS) for grades K–8, and the Tests of Achievement and Proficiency (TAP) for grades 9–12, both published by the Riverside Publishing Company. Furthermore, this research, conducted by an impartial third party whose own children are enrolled in public school, avoids the criticism of pro-home school bias leveled against previous studies, which were conducted by proponents of home education. (For further information on how the study was conducted, see "About the Study," page 11.)

Home schooling thrives on individuality, and the home education movement daily becomes more diverse. These factors make it difficult to determine whether achievement test scores are truly the best demonstration of home school achievement, and whether the families involved in the Rudner study are an exact representation of the movement as a whole. However, both the academic and demographic findings of this study do much to provide us with an informative portrait of modern home education in America.

The following is a summary of . . .

The Scholastic Achievement and Demographic Characteristics of Home School Students in 1998, by Lawrence M. Rudner, Ph.D. For a copy of the full report, see the peer-reviewed online journal *Educational Policy Analysis Archives* at http://epaa.asu.edu/epaa/v7n8/

RESULTS

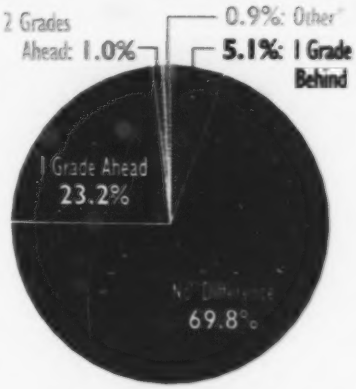
academic and demographic information from the largest national study of home schooled students

How do home schoolers measure up?

Home school students do exceptionally well when compared with the nationwide average. In every subject and at every grade level of the ITBS and TAP batteries, home school students scored significantly higher than their public and private school counterparts (Figure 1).

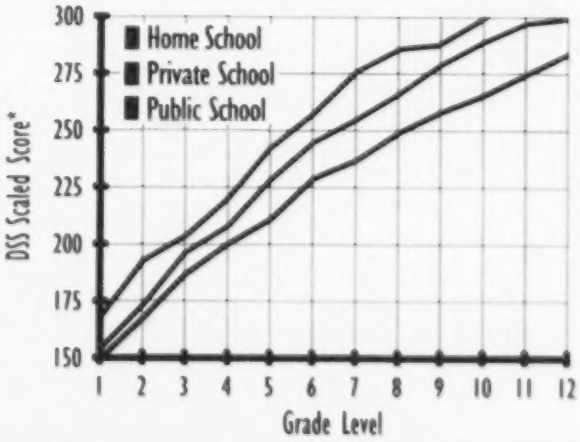
Because home education allows each student to progress at his or her own rate, almost one in four home school students (24.5%) are enrolled one or more grades above age level (Figure 2). It should be noted that home school scores were analyzed according to the student's *enrolled* grade rather than according to the student's age level. In other words, a 10-year-old home school student enrolled in 5th grade would have been compared to other students in the 5th grade, rather than to his age-level peers in the 4th grade. Thus, the demonstrated achievement of home schoolers is somewhat conservative.

Figure 2 — Enrolled Grade Compare to Age of Home School Student



* **Footnote:** "Other" includes all those enrolled more than 2 grades ahead or more than 1 grade behind.

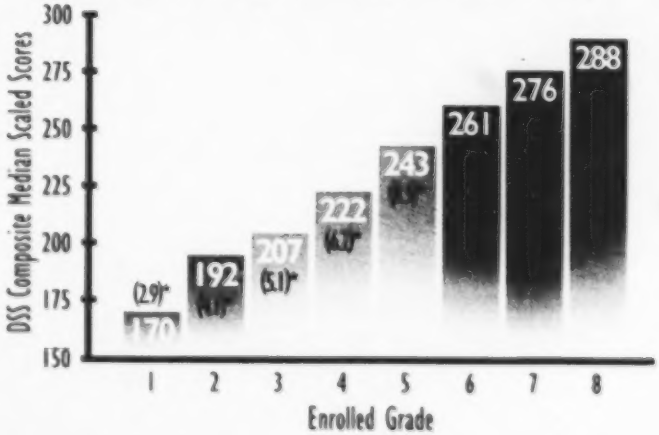
Figure 1 — Median Composite Scaled Scores



* **Footnote:** Developmental Standard Score (DSS) is the test publisher's (Riverside) scale used for public, private, and home school students to describe each student's location on an achievement continuum that spans grades K through 12. The DSS scale varies by subject area.

Scale capped at 300 because differences at the top are inappropriately exaggerated.

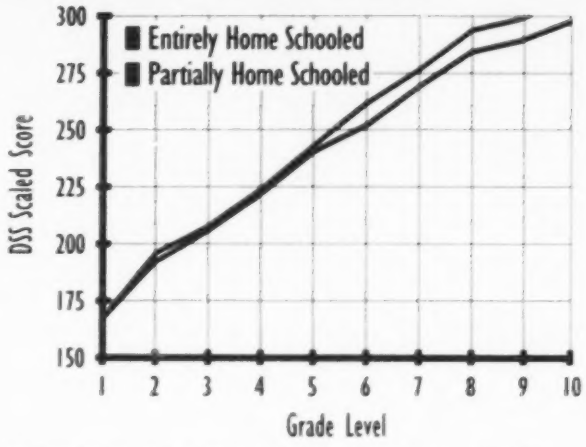
Figure 3 — Home School Median Scaled Scores (and Corresponding Grade Equivalent Scores*)



* **Footnote:** Grade Equivalent Scores (GES) are a reference point for interpreting DSS scores. A GES approximates a child's development in terms of grade and month within grade. (For example: A DSS composite score of 170 can be viewed as the typical DSS score earned by students in the ninth month of the second grade or a GES score of 2.9.)

On average, home school students in grades 1–4 perform one grade level higher than their public and private school counterparts. The achievement gap begins to widen in grade 5; by 8th grade the average home school student performs four grade levels above the national average (Figure 3).

Figure 4 — Home Schooled Median Scaled Scores by Academic Setting



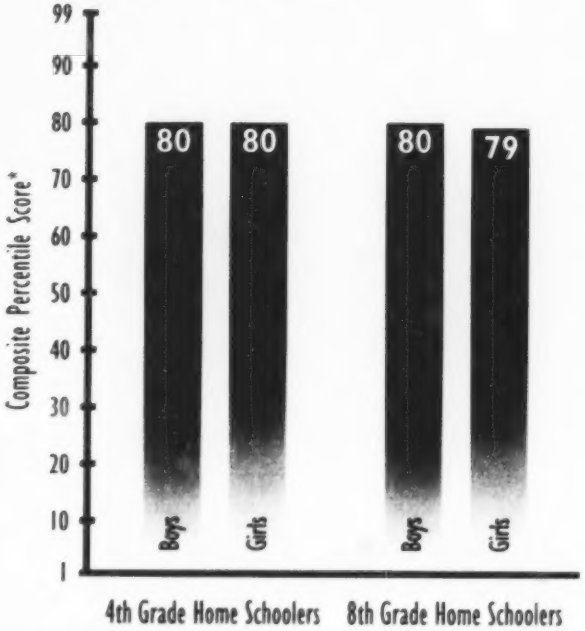
Footnote: Scale capped at 300 because differences at the top are inappropriately exaggerated.

Differences were also found among home school students when they were classified by amount of money spent on education, family income, parent education, and television viewing. However, it should be noted that home school students in every category scored significantly higher than the national average.

Another significant finding is that students who have been home schooled their entire academic lives have the highest scholastic achievement. The difference becomes especially pronounced during the higher grades, suggesting that students who remain in home school throughout their high school years continue to flourish in that environment (Figure 4).

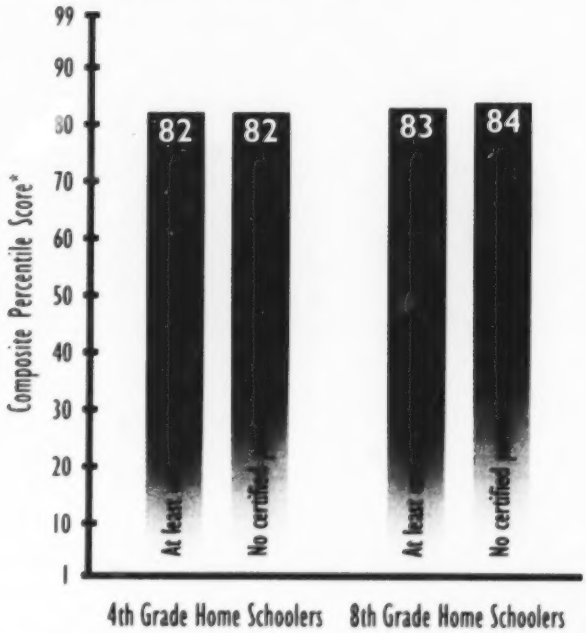
No meaningful difference was found among home school students when classified by gender (Figure 5). Significantly, there was also no difference found according to whether or not a parent was certified to teach (Figure 6). For those who would argue that only certified teachers should be allowed to teach

Figure 5 — Home School Percentile Rankings Based on Gender



* **Footnote:** Composite Percentile Score refers to the percentile corresponding to the mean composite scaled score.

Figure 6 — Home School Percentile Rankings Based on Parent Certification



* **Footnote:** Composite Percentile Score refers to the percentile corresponding to the mean composite scaled score.

their children at home, these findings suggest that such a requirement would not meaningfully affect student achievement.

Who home schools?

The home school community is undoubtedly a unique segment of American society. Far from being a cross-section of the American public, home schoolers stand out in several areas beyond the obvious distinction of their educational choices.

Key for Figures 7.1 & 7.2

- Didn't Finish High School
- High School Graduate
- Some College, No Degree
- Associate's Degree
- Bachelor's Degree
- Master's Degree
- Doctorate

Figure 7.1 — Father's Academic Achievement

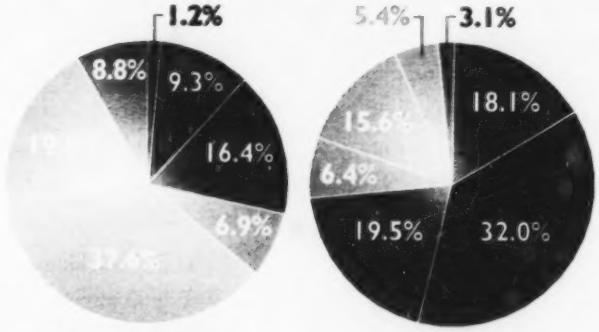
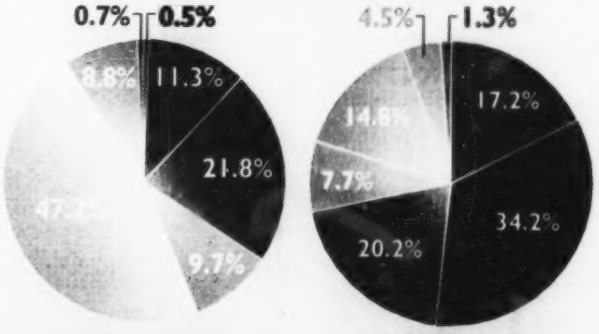


Figure 7.2 — Mother's Academic Achievement



* **Footnote:** National data: U.S. Census (1996; Table 8). Figures do not total 100% due to rounding.

Home school families have a higher median income ($52,000 in 1997) than the median income of all American families with children ($36,000 in 1995) (Figure 8). Home school families also tend to be larger than the national average; the majority (62.1%) have three or more children, while most American families with school-age children (79.6%) have only one or two children (Figure 9).

The overwhelming majority of home schooling parents are married couples (97.3%), compared to only 72% of families with school-age children nationwide (Figure 10). Furthermore, 76.9% of home school mothers do not work for pay, while 86.3% of those who do work, only work part-time. Nationwide, in 1996, only 30% of married women with children under 18 did not participate in the labor force.

The home school students who participated in the study were proportionally younger than the general American school population. Only 11.4% of home school students were in grades 9–12, compared to 30.3% of all students nationwide. This could be due to the relative newness of the home school movement, early graduation from high school, the desire of

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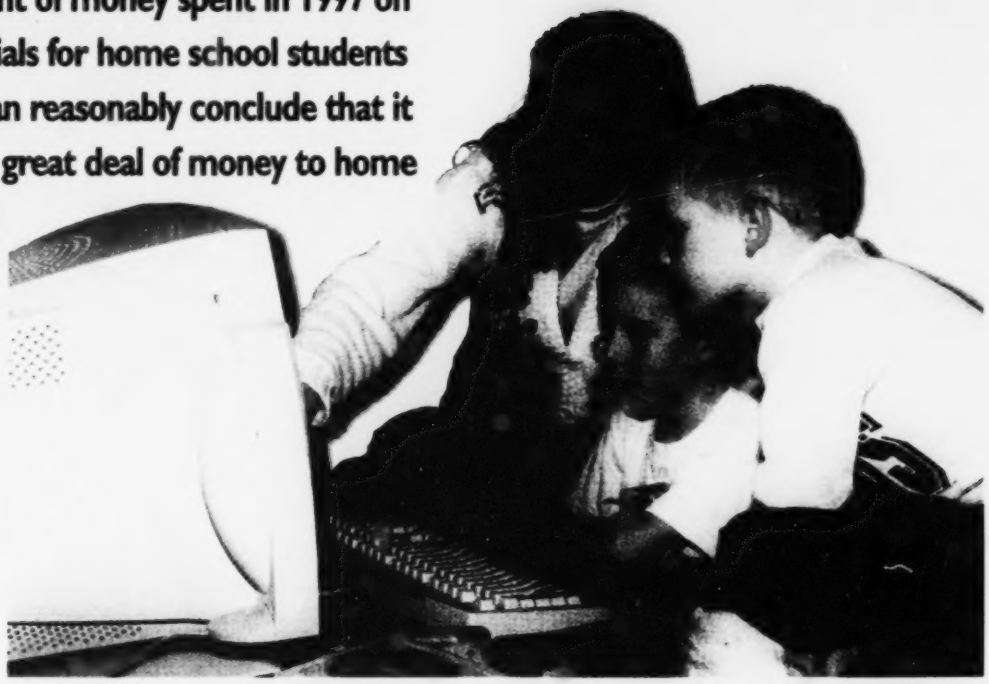
The median amount of money spent in 1997 on educational materials for home school students was $400....We can reasonably conclude that it does not require a great deal of money to home school successfully.



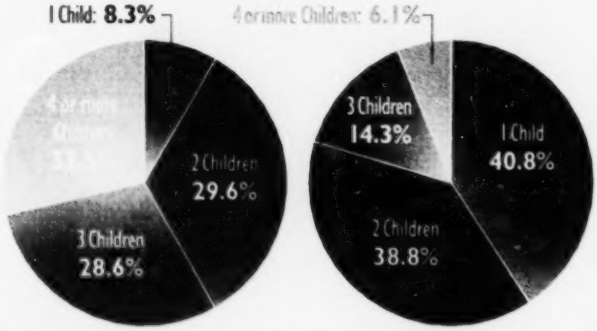
some students to attend a public or private high school, or simply the fact that some older students do not take achievement tests, opting instead for SAT preparatory testing.

The home schooling community contains a smaller percentage of racial minorities (6%) than public schools nationally (32.8%). The religious preferences of home schooling mothers who participated in this study are most often Independent Fundamental (25.1%), Baptist (24.4%), Independent Charismatic (8.2%), Roman Catholic (5.4%), Assembly of God (4.1%), Presbyterian (3.8%), or Reformed (3.4%). In 93.1% of families, the religious preference of the father was the same as that of the mother. (Home school leaders believe the high numbers of mothers and fathers reporting

Figure 8 — Home School Families Classified by Income with National Comparison

* **Footnote:** National data for 1995 from *Bruno and Curry* (1997, Table 19). Figures do not total 100% due to rounding.

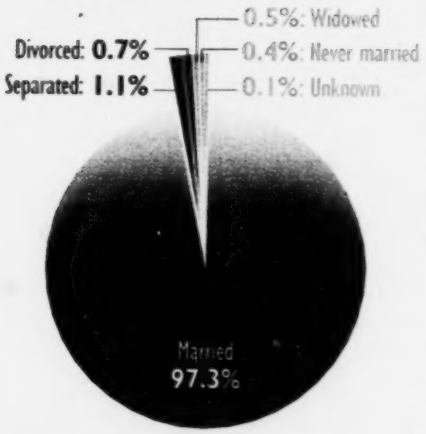
Figure 9 — Home School Families Classified by Family Size with National Comparison



* **Footnote:** National data U.S. Census (1997a, Table 77).

evangelical preferences is likely skewed in favor of religious home schoolers, since the families obtained the tests through a religious supplier.

Figure 10 — Home School Families Classified by Parents' Marital Status

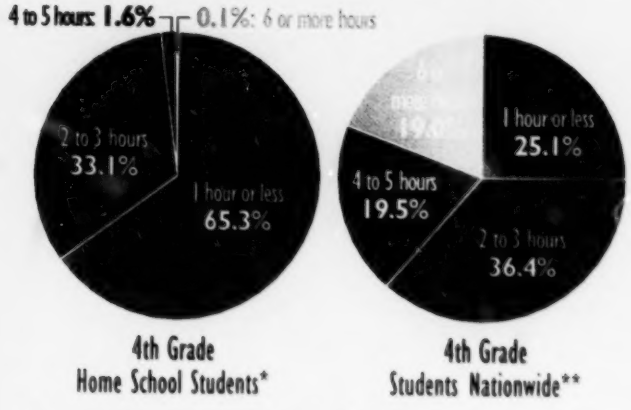


Footnote: Figures do not total 100% due to rounding

However, there is no known reason to believe that secular home school students perform at a lower academic level than religious home schoolers.)

Another distinguishing characteristic is that home schooled children tend to watch significantly less television than do average American children. On average, only 1.6% of home schoolers in the 4th grade watch more than three hours of television per day, compared to nearly 40% of 4th graders nationwide (Figure 11).

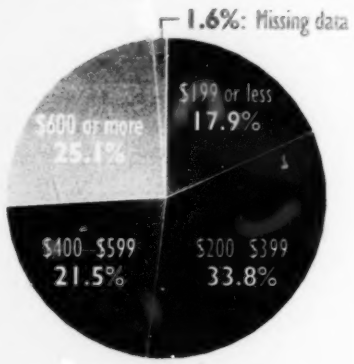
Figure 11 — Comparison of Hours of Daily Television Viewing for 4th Graders



* **Footnote:** Figures do not total 100% due to rounding
** National data: NAEP Math 1997.

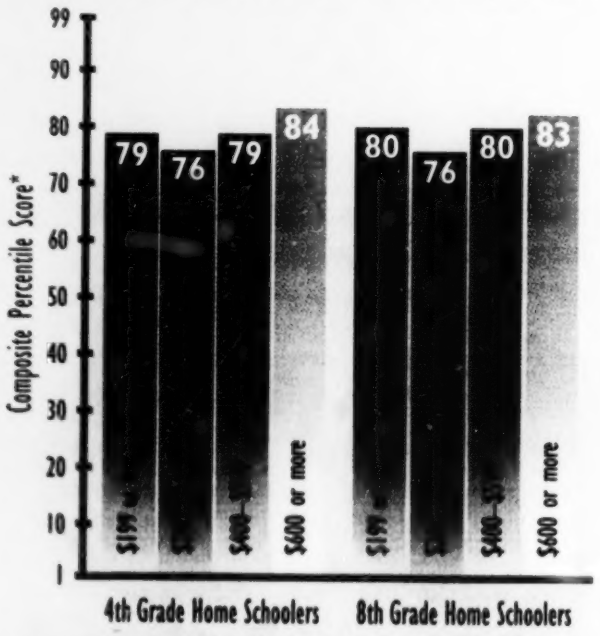
The median amount of money spent in 1997 on educational materials for home school students was $400. When we consider this relatively small expenditure in light of the high scholastic achievement of most home school students, we can reasonably conclude that it does not require a great deal of money to home school successfully (Figure 12).

Figure 12.1 — Money Spent on Home Education per Student in 1997



Footnote: Figures do not total 100% due to rounding.

Figure 12.2 — Home School Percentile Scores Based on the Money Spent on Education per Child



* **Footnote:** Composite Percentile Score refers to the percentile corresponding to the mean composite scaled score.

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VIEWPOINT

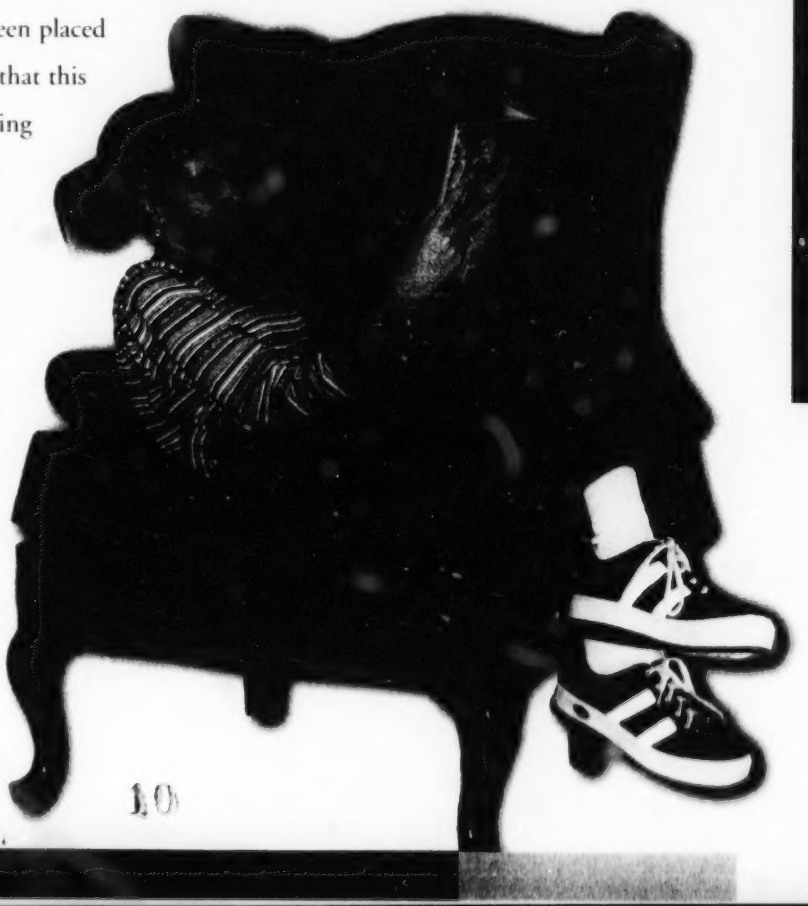
evaluation and discussion by Michael Farris, HSLDA President

Why are home schoolers succeeding?

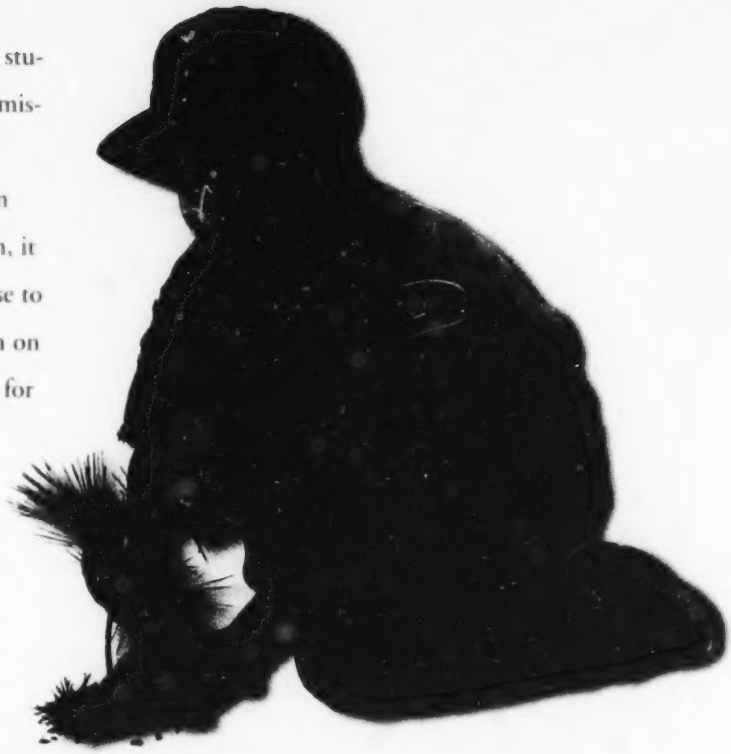
Without a doubt, the Rudner study demonstrates that home schooled students are doing exceptionally well. The question *why?*, however, is one that this study cannot sufficiently answer. Home school students typically come from families where income is relatively high, marriages are intact, and dedication to education is strong. We do not know how these children would have performed had they been placed in public or private school, nor can we say that this study *proves* the superiority of home schooling over other educational choices. The answer to these questions lies not in statistics, but rather in individual stories.

Many times over the past two decades, important legislative, legal, and policy decisions have been made, in part, based on the perceived or actual academic performance of home educated students. It should not be necessary, nor is it really possible, to prove that home education is better than institutional schools. It is clear that the average home school child performs significantly higher than the average public school child. Given the demographic distinctions between the groups under comparison, it is only safe and fair to conclude that home education works well for those who are choosing this form of education. Without needing to criticize other forms of education, we can confidently assure policy makers that this system delivers solid academic results.

With this in view, it would be contrary to the evidence to suggest that public school regulatory measures are justifiably imposed on home schoolers. Specifically, this study found no valid correlation



between teacher certification and student achievement. It would be a misuse of this study to suggest that teacher certification is not valid in public schools. By the same token, it would be a lapse in common sense to believe that imposing certification on home school families is necessary for good academic results.



Another noteworthy fact uncovered by this study is that home school achievement tends to improve the longer a child has been taught at home. This distinction is especially great in the higher grades. Clearly, home education is not just a quick fix for problem cases, nor is it only for young children. It is a valid educational option, creating students who love learning and young adults who are well prepared for a bright future.

The most telling demonstration of home education's success will be the individual lives of young people who grow up and go out to impact the nation and the world.

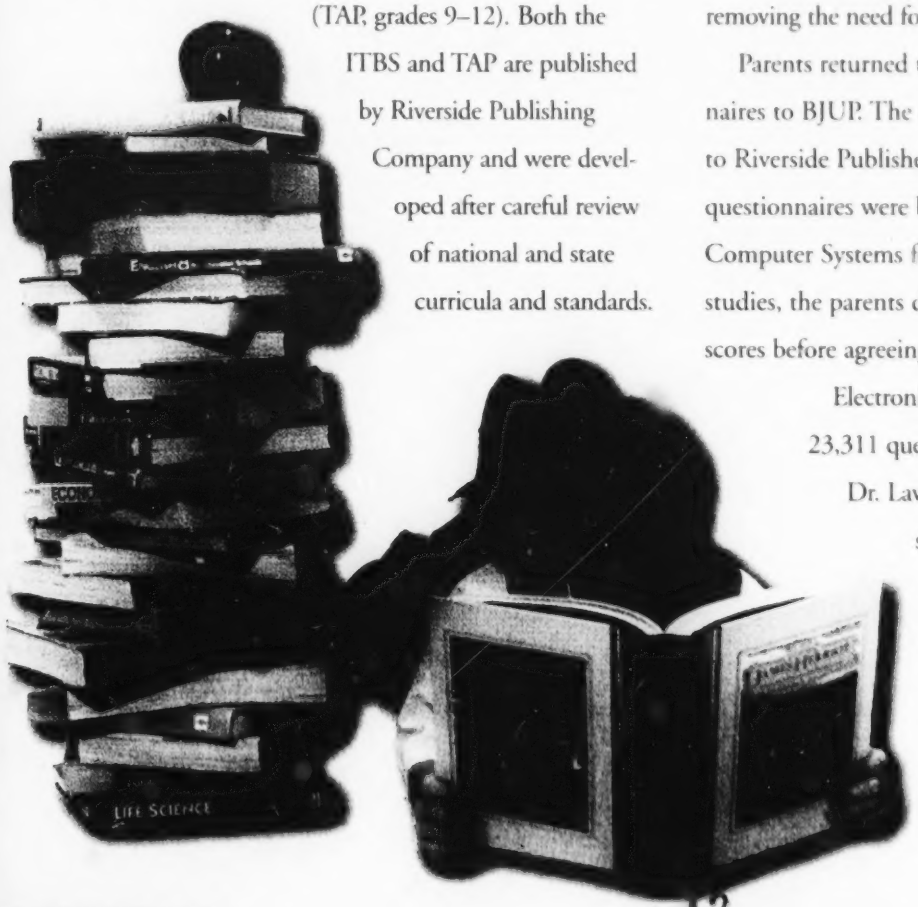
The only theoretical way to perform a perfect experiment to determine if home schooling is better or worse than public or private schools is to use a randomized control design. A large number of children would be randomly selected and required to attend home school. Another group of children would be randomly selected and required to attend public or private school. Clearly that is not possible. But even that "pure" design would have a major flaw. It fails to consider one factor that clearly contributes to home education's success—parental motivation. Because home schooling, by its very nature, is practiced only in families where parents are strongly motivated, it is undetermined what would happen if unmotivated parents were randomly assigned to home educate their children.

This study does not enter the theoretical domain. It simply measures the families who are motivated to home school and concludes that they are doing very well. The most telling demonstration of home education's success, however, will be the individual lives of young people who grow up and go out to impact the nation and the world. We look forward in great anticipation to the Patrick Henrys, John Quincey Adamses, and Thomas Edisons of the modern home schooling movement.

REGARDING the study and the researcher

About the study

Bob Jones University Press Testing and Evaluation Service, the largest home school testing service in the nation, provides assessment services to home school students and private schools on a fee-for-service basis. In Spring 1998, 39,607 home school students were contracted to take the Iowa Tests of Basic Skills (ITBS, grades K–8) or the Tests of Achievement and Proficiency (TAP, grades 9–12). Both the ITBS and TAP are published by Riverside Publishing Company and were developed after careful review of national and state curricula and standards.



BJUP certified the test administrators, many of whom were the students' parents. Students were given an achievement test, and their parents were asked to complete a questionnaire entitled "Voluntary Home School Demographic Survey." This questionnaire, designed by the researcher and staff of Home School Legal Defense Association, was significantly shorter than previous survey instruments. It posed all questions in an objective format, rather than a constructed response format. National Computer Systems was commissioned to publish the questionnaire on computer scannable forms, removing the need for manual data processing.

Parents returned the completed tests and questionnaires to BJUP. The tests were then bundled and sent to Riverside Publishers for machine scoring, and the questionnaires were bundled and sent to National Computer Systems for scanning. Unlike previous studies, the parents did not know their children's scores before agreeing to participate in this study.

Electronic copies of 23,415 test results and 23,311 questionnaire results were then sent to Dr. Lawrence Rudner. A total of 20,760 students in 11,930 families provided useable questionnaires with corresponding achievement tests. The achievement test and questionnaire results were combined to form the dataset used in this analysis.

The resulting report, *Scholastic Achievement and Demographic Characteristics of Home School Students in 1998*, was published in the peer-reviewed journal *Educational Policy Analysis Archives* (http://epaa.asu.edu).

Did you know???

Students home schooled their entire academic lives have the highest achievement. . . . suggesting that students who remain in home school throughout their high school years flourish in that environment.

About the researcher

Dr. Lawrence M. Rudner is with the College of Library and Information Services, University of Maryland in College Park. He has been involved in quantitative analysis for over 30 years, having served as a university professor, a branch chief in the U.S. Department of Education, and a classroom teacher. For the past 12 years, he has been the Director of the ERIC Clearinghouse on Assessment and Evaluation. ERIC is an information service sponsored by the National Library of Education, U.S. Department of Education, which acquires and abstracts articles and manuscripts pertaining to all aspects of education; builds and maintains on-line databases; publishes articles and books; and provides a wide range of user services. Dr. Rudner holds a Ph.D. in Educational Psychology (1977), an MBA in Finance (1991), and lifetime teaching certificates from two states. His two children attend public school.

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